

A STOP AT AP'S BURNIE MILL

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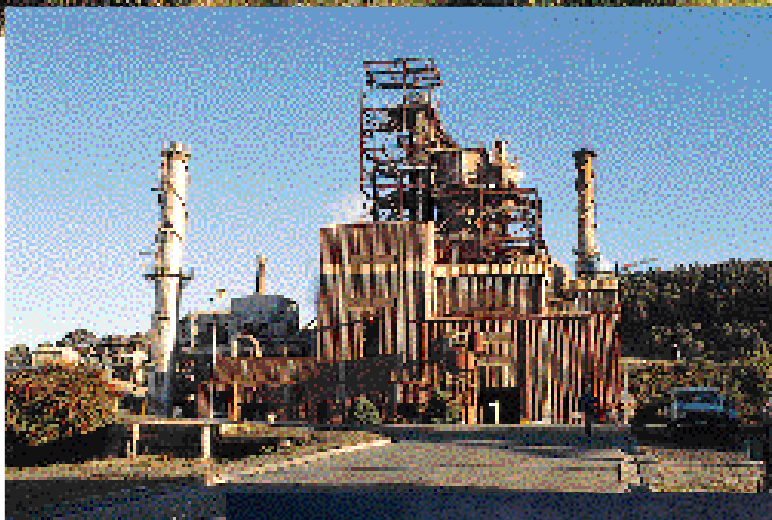
TASMANIA'S OLDEST MILL WILL SOON MARK ITS 60TH ANNIVERSARY

THE PULP AND PAPER MILL AT BURNIE in northwest Tasmania has ended up being a test bed for some well-known—and lesser known—processes. Its No. 1 continuous digester, for example, which started in 1956, was one of the first four ever built by Kamyr, and it's the oldest still in use.

Burnie was also one of the first short-fiber pulp mills of consequence in the world and the first pulp and paper mill of any sort in Tasmania, according to Robin Smith, quality systems leader. Using 100% Tasmanian eucalypt, the mill produced its first roll of paper in 1938. Soda bleached pulp was first produced there in 1939. The soda process was selected because the mill was to be built so close to town, Smith noted.

The mill uses a soda anthraquinone (AQ) process installed in 1979, with two counter-current digesters. Chips go through a separate screening plant, without pretreatment before a four-stage, C-E-D-H bleaching process.

Originally, spent liquor was run through evaporators and then through a series of seven rotary incinerators. In 1984, the mill opted for



(top) Burnie and the mill complex

(center) The pulp mill

(right) The main office





(top) Iron oxide addition point for the DARS furnace

(center) The bag house

(bottom) Finished rolls of paper



a direct alkali recovery system (DARS) as a replacement. Spent liquor is concentrated to 65% solids and fed to the DARS furnace. Combustion air is heated as it passes through the cooling bed of a lower chamber and the fluidized combustion bed of the main chamber. Caustic and iron oxide are leached from the sodium ferrite produced by combustion. The caustic goes back to the digester; the iron oxide goes back to the DARS furnace.

As built, Burnie's DARS didn't work as well as expected, Smith said. The basic problem was dust clogging the flow of air through the furnace. That required a shutdown every two or three months for cleaning. Each cleaning took about a week to allow for cooling and a slow, uniform heat-up. A pelletizer was added to help control the dust problem.

For awhile, the mill was operating with three different types of recovery systems. A couple years ago the rotary incinerators were finally taken off-line and they are now being removed. The operation of the DARS at Burnie has become more efficient, though it won't match improved designs for the system. The process is being promoted for use at other soda mills, Smith noted.

A wet air oxidation system handles about a third of the recovery. "It's a chemical engineer's dream and a mechanical engineer's nightmare," Smith said. It's an extremely efficient operation, but it requires a lot of energy and high pressure (20,000 kPa), he said. The oxidized liquor is further processed to obtain caustic soda used in the digesters.

The paper mill itself is fairly conventional, with two paper machines. One produces copier, printing, and writing paper. The other produces base paper to be turned into coated papers at Wesley Vale, about 60 km east of Burnie.

In June 1994, Burnie's No. 3 paper machine was retired. The machine began operation in 1948 and had gone through several upgrades. As many as 10 paper machines were in use at the mill during the 1960s. Paper production at the mill is now about 115,000 metric tons/year, down about 22,500 metric tons from 10 years ago.

Both Burnie and Wesley Vale, which started in 1970, were owned by Associated Pulp and Paper Mills (APPM). The company was incorporated in 1936 in Melbourne, Australia. Various other mills and holdings came and went through the years until Amcor acquired APPM in November 1993.

The two mills in Tasmania are part of the Amcor Paper Group, which manages Australian Paper (AP) in Australia and McKinley Paper Co. in the United States. AP was formed in 1993 through the merger of APPM and Australian Paper Manufacturers (APM). The group's primary mill sites in Australia proper include Maryvale, Fairfield and Broadford in Victoria, Botany and Shoalhaven in New



South Wales, Petrie in Queensland, and Spearwood in West Australia. In the United States, the group has a mill at Prewitt, New Mexico.

Amcor announced plans to spend A\$ 21 million (about US\$ 16.6 million) at Burnie for environmental improvements and to increase pulp production from 75,000 metric tons/year to 80,000 metric tons/year. Recently announced investments at Burnie and Wesleyvale will allow the company to expand into the film coated offset market and further increase coated paper capacity at the mills.

The mill began a three-pronged, A\$ 13.5 million (US\$ 10.7 million) environmental improvement program in 1994. The program was designed to minimize waste production within the plant and improve the waste water treatment system. It includes construction of an offshore outfall that will more effectively disperse waste water from the mill.

HUMAN RESOURCES

Burnie became ISO 9002 certified in 1994, Smith said. Going through the certification process helped standardize operations at the mill and fostered employee involve-

ment in operations. Most areas of the mill now use self-managed work teams.

Earlier this year, 63 of Burnie's employees celebrated 25 years or more of service at the mill. Of those, 28 men have worked at the mill for 30 years or more.

A lot of the mill operators are working toward a pulp and paper certificate through the technical and further education program (TAFE). The program serves as a central accrediting body for all industries so that education and training are transferable between locations. Some employees are doing the full course; others are just taking classes specific to their work areas. Each module takes about 20 hours, Smith said. Because of their experience many simply need to do some reading and write an assignment assessed through TAFE to complete some of the modules. Various industry experts, including Smith, have written the modules or parts of the modules.

The mill also supports the Youth Achievement Australia program. Students from local schools meet at the mill's main office to work on a business project as part of the program. Some of the mill staff also serve as advisors to the project teams.

Meadows is editor of TAPPI JOURNAL.